REMARKS

This paper is presented in response to the official action dated November 2, 2006, wherein: (**a**) claims 1-10 were pending; (**b**) claims 1-10 were rejected under 35 USC § 101 as directed to non-statutory subject matter; (**c**) claims 2, 5, and 6 were rejected under 35 USC § 112 ¶ 2 as indefinite; and, (**d**) claim 1 was objected to as informal.

This paper is timely filed as it is accompanied by a petition under 37 CFR § 1.136(a) for an extension of time to file in the second month, and payment of the required extension fee.

I. Brief Summary of the Amendments to the Claims

Claims 1-10 have been canceled. By these amendments, it is requested that the indefiniteness rejection of claims 2, 5, and 6 be withdrawn as moot.

New claims 11-18 have been added to more clearly set forth the method steps for predicting a deformation in a body. Support for the claims may be found, for example, in the application as indicated in Table 1, below.

Table 1. Support for New Claims 11-18

Claim	Support in Description
11	Claim 1 as filed
12	Page 34
13	Claim 2 as filed
14	Claim 1 as filed
15	Claim 1 as filed
16	Pages 29-33, Figures 15-18
17	Page 20, Figure 7
18	Claim 10 as filed

II. New Claims 11-18 Possess Sufficient Utility Under 35 USC § 101

The pending application claims were rejected under 35 USC § 101 as directed to non-statutory subject matter. The action asserts that the recited method is not a practical application of an abstract idea, nor does it produce a useful, concrete, or tangible result. *See State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373-74 (Fed Cir. 1998); *see also* pp. 2-4 of the action.

New claims 11-18 possess sufficient utility because they represent a practical application of the force balance formula (page 36, claim 1) in a way that produces a useful, tangible result. Specifically, claim 11 recites the steps of specifying the input information used to apply the formula to a physical body. The useful result is the prediction of how the body responds to the specified stimuli and conditions in terms of its resulting deformation.

While the abstract idea of the invention is to represent forces exerted by a body and its surroundings upon one another as vector fields brought into equilibrium through constraint forces, there are number of practical applications of the abstract idea. For example:

> (1) The method predicts dilatancy of isotropic solids upon simple shear, or of anisotropic solids in general, purely as a function of the physical set-up, and not as a material property, as it is treated in the conventional method (i.e., the angle of dilation);
>
> (2) The method correctly predicts the orientation of cracks and joints as they are observed in nature without resorting to yet another material constant (i.e., the internal friction coefficient); and,
>
> (3) The method correctly predicts the orientation of the maximum loading direction (i.e., the contracting eigendirection) as it is observed along the San Andreas Fault in California.

There is a substantial difference between modeling a certain behavior using somewhat arbitrary material constants (i.e., as in the conventional method) and predicting the same behavior as a natural result of a better understanding of the nature of the problem (i.e., as in the disclosed method).

The recited method has additional utility in that it is independent of physical form. Specifically, the method can be applied to a system deep within a large solid, in which case the external shape of the solid is irrelevant. This is a situation in which both the body and the surroundings comprise identical materials (claim 15). In this case, the method can be used to predict localized radial elongations/contractions and identify volumetric deformations (claim 17). *See* p. 20 of the specification and Figure 7 (applying the method to predict the deformation of a localized volume element).

However, the method also can be applied to the deformation of a discrete body with a specific external shape. This is a situation in which both the body and the surroundings comprise different materials (claim 14). In this case, the method can be used to predict highly realistic distributions of the dilation cracking potential and shear cracking potential within the body, thereby identifying regions within the body susceptible to deformation (claim 16), which is clearly a useful, tangible result. *See* pp. 29-33 of the specification and Figures 15-18 (applying the method to rectangular bodies with varying aspect ratios).

In view of the foregoing, it is submitted that new claims 11-18 recite a practical method producing a useful, tangible result, and it is requested that 35 USC § 101 rejection be withdrawn.

III. Conclusion

In view of the foregoing, cancellation of claims 1-10, entry of new claims 11-18, reconsideration and withdrawal of the rejections, and substantive examination of the pending claims are respectfully requested.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, he is urged to telephone the undersigned at the indicated number.

March 30, 2007

Respectfully submitted,

By_____

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